

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

ORDER NO. 00-057

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF NEEDLES, OWNER/OPERATOR
WASTEWATER TREATMENT PLANT
Needles - San Bernardino County

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. On April 7, 2000, the City of Needles, owner/operator (hereinafter also referred to as the discharger), mailing address 817 Third Street, Needles, CA 92263, completed an application of new waste discharge requirements for a new wastewater treatment plant to discharge secondary treated wastewater to a percolation pond. The facility is located in SW 1/4 of Section 33 T9N, R22W, SBB&M as indicated in Attachment A, incorporated herein and made a part of this Board Order.
2. The discharger owns and operates a wastewater collection, treatment and disposal system, and provides sewerage service to the City of Needles. The treatment plant is located at 516 East Broadway, Needles, CA 92263.
3. The discharger built a new wastewater treatment plant utilizing a 1.2 MGD Sequential Batch Reactor (SBR) System technology to replace its old, significantly deteriorated plant. Presently the average daily flow is 0.52 MGD.
4. A Sequencing Batch Reactor (SBR) system is an activated sludge process designed to operate under non-steady state (batch) conditions. Waste stabilization and sedimentation are carried out in a time sequence rather than the conventional space sequence of continuous flow systems. SBR systems perform separate activated sludge functions in a single tank. All SBR processes use four distinct operating phases during each "batch" or SBR treatment cycle. These phases include: 1) *fill*, 2) *react*, 3) *settle*, and 4) *decant* and all occur in the same tank or reactor. The treatment cycle length for most SBR systems treating domestic waste ranges between four and six hours. During the *fill* phase, raw wastewater is distributed to the individual SBR reactor, and can be kept in an anoxic (non-aerated) state to create microorganisms with good settling characteristics and denitrification, or can be aerated to allow the biomass to begin consumption of the raw wastewater and nitrification. The *react* phase also can be operated with or without aeration, and allows the biomass to consume and stabilize the organics in the wastewater and reduce the biological oxygen demand (BOD), and also allows nitrification and denitrification. The *settle* phase allows the solids to settle, leaving clear, treated water in the upper liquid layer. The purpose of the *decant* phase is to draw treated water from the upper liquid layer of the filled SBR reactor. Sludge wasting typically occurs during the *settle* or *idle* phase.

5. The new plant consists of a mechanical bar screen (with a manual by-pass), an aerated grit removal chamber, two 68-foot diameter, 22-foot deep, and 600,000 gallon capacity sequencing batch reactors, a 68-foot diameter and 22-foot deep aerobic digester, a 68-foot diameter and 22-foot deep equalization basin, thirty-two 100'X20'X2.5' sludge drying beds, a chlorine injection station, and one percolation pond. Depending upon the future growth in the area, the discharger plans to add three more percolation ponds in the next few years.
6. From the collection system, the influent wastewater passes through the mechanical bar screen to separate large solids. The screened influent then passes through a grit chamber where heavy inorganic materials such as sand, egg-shells, and cinder will settle, but the lighter organic material will remain in suspension. The influent then enters the SBRs where it will undergo further treatment resulting in clear treated effluent in the upper portion of the reactor and sludge settled at the bottom of the reactor. The clear treated effluent is decanted and stored in the equalization basin. The equalized effluent is then pumped via a 12-inch force main, where it will be injected with chlorine for disinfection before being discharged into the percolation pond.
7. The waste activated sludge is pumped into the sludge drying beds. The sludge drying beds have a total surface area of 64,000 ft². The beds are designed to handle a maximum 1.6 MGD of activated sludge. The discharger states that dried and solidified sludge will be shipped by truck to a licensed landfill for disposal.
8. The discharger states that the percolation pond has an area of seven acres, and is approximately 30-foot deep with 1 to 1 side slopes. The pond is entirely bounded with a six-foot high chain-link fence with a three-strand barbed wire at the top and has four, 16-foot wide service gates.
9. The discharger states that the three existing emergency storage ponds, which were previously used during malfunction of the old treatment system and emergency overflows, will no longer be used.
10. Geologic logs for boring numbers 19 and 20 submitted by the discharger indicate that the groundwater was encountered respectively at a depth of 23 and 26.5 feet below ground surface. The soil encountered in the two borings consists mostly of sandy gravel and gravelly sand.
11. The discharger states that the groundwater under and around the new plant and the percolation pond is of good quality with high alkalinity.
12. The discharger reports that the new plant uses water from the City of Needles water supply well field that is located 1.5 miles north (upriver) from the new plant. The well field draws water from the Colorado River Aquifer.
13. The discharger reports that average annual rainfall for the Needles area is 4 inches. The average annual evaporation rate for the Needles area is 73.57 inches
14. The discharger states that the new plant and percolation pond are located in FIRM zone X (outside the 500-year floodplain).

15. The discharger states that all the slopes in and around the new WWTP, sludge drying beds, and percolation pond were over-excavated, and where necessary loose sand was replaced with stable material. In area where erosion potential exists, rip-rap has been installed.
16. The discharger reports that berms and earth depressions have been incorporated in the design and new construction to contain spills and to protect the facility against incursion of offsite-water runoff.
17. The discharger proposes to conduct a study to provide the RWQCB staff with evidence that the disinfection of the effluent discharged into the percolation basins is not necessary for the protection of the underlying groundwater basin and neighboring surface water. If the study demonstrates to the satisfaction of the RWQCB that water quality is sufficiently protected without the chlorination of the effluent discharged to the percolation basins, the disinfection requirements and associated bacteriological testing of effluent discharged to the percolation basins may be removed.
18. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) was adopted on November 17, 1993 and designates the beneficial uses of ground and surface waters in this Region.
19. The beneficial uses of ground waters in the Piute Hydrologic Unit are:
 - a. Municipal and Domestic Supply (MUN)
 - b. Agricultural Supply (AGR)
 - c. Industrial Service Supply (IND)
20. The discharger has been subject to an NPDES Permit No. CA0104205 and waste discharge requirements adopted for the old plant and the standby basins under Board Orders No. 99-002 and 90-071. Upon adoption of this Board Order, Board Orders 99-002 and 90-071 respectively will be rescinded.
21. The discharger prepared a California Environmental Quality Act (CEQA) Mitigated Negative Declaration and Environmental Assessment, in November 1996, and filed a "Notice of Determination" under CEQA.
22. The Board has notified the discharger and all known interested agencies and persons, of its intent to update waste discharge requirements for said discharge, and has provided them with an opportunity for a public meeting and an opportunity to submit comments.

IT IS HEREBY ORDERED that Board Orders No. 99-002 and 90-071 are rescinded, and in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Porter Cologne Water Quality Act and the regulations and guidelines adopted thereunder, the discharger shall comply with the following:

A. Effluent Limitations

1. Representative samples of treated and disinfected wastewater discharged to the percolation pond shall not contain the constituents listed below in excess of the following limits:

<u>Constituent</u>	<u>Units</u>	<u>30-Day¹ Arithmetic Mean Discharge Rate</u>	<u>7-Day² Arithmetic Mean Discharge Rate</u>	<u>Maximum</u>
Flow	MGD ³	---	---	1.2
Biochemical Oxygen Demand (BOD)	mg/L ⁴ lbs/day ⁵	30 300	45 450	----- -----
Total Suspended Solids	mg/L lbs/day	30 300	45 450	----- -----
Sulfate (SO ₄)	mg/L lbs/day	70 700	----- -----	----- -----
Chloride (Cl)	mg/L lbs/day	70 700	----- -----	----- -----
Fluoride	mg/L lbs/day	1.2 12	----- -----	----- -----
Total Nitrogen (as nitrogen)	mg/L lbs/day	10.0 100	----- -----	----- -----

2. The fecal coliform concentration in daily samples of the disinfected secondary effluent discharged to the percolation pond for any 30-day period shall not exceed a log mean of 200 MPN/100 ml⁶, nor shall more than ten percent of total samples collected during any 30-day period exceed 400 MPN per 100 ml.⁷
3. The disinfected secondary effluent discharged to the percolation pond shall not contain total dissolved solids concentrations in excess of 400 mg/L above the source water. The source water for the purpose of this WDR is defined as the water that complies with the California drinking water standards and was extracted from an active water supply well located in the vicinity of the new wastewater treatment plant.
4. The pH of the effluent shall be maintained within the limits of 6.0 to 9.0.
5. The 30-day average percent removal of the pollutant parameter BOD₅ and suspended solids calculated on the basis of analytical results of samples of influent to the SBR and the treated and disinfected effluent to the percolation pond shall not be less than 85 percent.

B. Ground Water Limitations

1. Ground Water Limitations are based on water quality objectives contained in the Basin Plan. As such, they are a required part of this permit.
2. The discharge shall not cause or contribute the following in groundwater:

¹ 30-day Mean - The arithmetic mean of pollutant parameter values of samples collected in a period of 30 consecutive days as specified in the Monitoring and Reporting Program.

² 7-day Mean - The arithmetic mean of pollutant parameter values of samples collected in a period of 7 consecutive days as specified in the Monitoring and Reporting Program.

³ MGD - Million gallons-per-day, cumulative flow of influent to the SBR system and the cumulative flow of the disinfected secondary effluent to the percolation pond will be measured and recorded daily.

⁴ mg/L - Milligrams-per-liter

⁵ Pounds/day - Based on design treatment capacity of 1.2 MGD. At lower flows, the discharge rate shall not exceed allowable rates based on actual flows.

⁶ MPN/100 ml - Most Probable Number-per-100 milliliters

⁷ See Finding 17 and Provision 9.

- a. Concentration of pollutants in the groundwater samples collected from hydraulically downgradient monitoring wells at the approved locations to exceed the background concentrations in the hydraulically upgradient monitoring wells.
- b. The maximum specific electrical conductance to exceed background levels.
- c. Taste or odor-producing substances to impart undesirable tastes or odors to the water in the hydraulically downgradient monitoring wells or otherwise adversely affect beneficial uses.

C. Prohibitions

1. Discharge of treated and disinfected wastewater at a location different from the percolation pond is prohibited.
2. The bypass or overflow of untreated wastewater or wastes to the percolation ponds is prohibited.
3. The discharger shall not accept waste in excess of the design capacity of the treatment plant.

D. Specifications

1. The treatment or disposal of wastes at this facility shall not cause pollution or nuisance as defined in Section 13050 of Division 7 of the California Water Code.
2. The wastewater treatment plant shall be protected from any washout or erosion of waste, and from any inundation that could occur as a result of floods having a predicted frequency of 100 years.
3. Public contact with undisinfected wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
4. The discharge shall not cause degradation of any water supply wells and groundwater.
5. A minimum two feet depth of freeboard shall be maintained at all times in the percolation pond.
6. The percolation ponds' surface and banks shall be kept free of oil, grease, wax, fecal solids, algae, and floating materials (liquids, solids, foam, and scum).
7. Dissolved oxygen concentration of 1 mg/L shall be maintained at all times in the top one foot of the effluent in the percolation pond.
8. Undesirable odors from the SBRs, aerobic digester, equalization basin and the percolation pond shall be controlled and minimized to prevent a nuisance condition.

E. Provisions

1. The discharger shall provide a report to the Regional Board when it determines that the plant is operating at 80 percent of the design capacity specified in Finding No. 3, above. The report should indicate what steps, if any, the discharger intends to take to provide for the expected wastewater treatment capacity necessary when the plant reaches design capacity.
2. Prior to any modifications in this facility which would result in material change in the quality or quantity of wastewater treated or discharged, or any material change in the location of discharge, the discharger shall report all pertinent information in writing to the Regional Board and obtain revised requirements before any modifications are implemented.

3. The discharger shall ensure that all site-operating personnel are familiar with the content of this Board Order, are adequately trained and proficient in complying with operation, maintenance, monitoring and reporting requirements of this Board Order, and shall maintain a copy of this Board Order at the site.
4. The discharger's wastewater treatment plant shall be supervised and operated by persons possessing certification of appropriate grade pursuant to Section 3680, Chapter 4, Division 4, Title 23 of the California Code of Regulations.
5. Prior to any change in ownership or management of this operation, the discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.
6. The discharger is the responsible party for the waste discharge requirements and the monitoring and reporting program for the facility. The discharger shall comply with all of the conditions of this Board Order. Any noncompliance with this Board Order constitutes a violation of the Porter-Cologne Water Quality Control Act and is grounds for enforcement action. Violations may result in enforcement actions, including Regional Board Orders or court orders, requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board.
7. The discharger shall, at all times, properly operate and maintain all systems and components of treatment and control which are installed or used by the discharger to achieve compliance with the conditions of this Board Order. Proper operation and maintenance includes optimum performance of all the treatment process units, accuracy of all manual and automatic measurements and laboratory analytical results, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of this Board Order. All systems both in service and reserved, shall be inspected and maintained on a regular basis. Records shall be kept of the inspection results and maintenance performed and made available to the Regional Board upon demand.
8. The discharger shall report any noncompliance that is likely to endanger human health or the environment, within 24 hours of becoming aware of its occurrence. The incident shall be reported to the Regional Board Office and to the Office of Emergency Services. During non-business hours, the discharger shall leave a message on the Regional Board's voice mail. A written report shall be submitted to this office within five business days of the discharger becoming aware of the incident. The report shall contain a description of the noncompliance, its causes, the duration, and the actual or anticipated time for achieving compliance. The report shall include complete details of the steps that the discharger has taken or intends to take, in order to prevent recurrence. All intentional or accidental spills in excess of 1,000 gallons shall be reported as required by this provision.

9. Within 180 days of adoption of this Order, the discharger will submit the following information to this Board for review and approval:
 - a. A report of hydrogeologic investigation of the area of the new plant and its surroundings containing information on: soil stratigraphy to a depth of 20 feet below water table, depth to groundwater, groundwater flow direction, hydraulic gradient and groundwater velocity based on data collected from appropriate number of borings. The report will include a scaled map prepared by the surveyor showing all boring locations and groundwater elevation contours.
 - b. Based on information in the hydrogeologic investigation report, the discharger shall submit a sampling and analysis plan containing locations and design of monitoring wells, and procedures to be used for their construction, development, purging, and sampling, analytical parameters to be used for analyses of groundwater samples, sample handling, preservation, and chain of custody procedures, QA/QC procedures, and identification of a California DHS-certified laboratory to be used for chemical analysis. The monitoring wells shall be located hydraulically upgradient and downgradient of the percolation pond. The hydraulically upgradient monitoring wells shall be located and designed in a manner as to obtain a representative sample of groundwater unaffected by the percolation ponds. The hydraulically downgradient monitoring wells shall be located and designed in a manner as to obtain representative samples of groundwater directly influenced by each percolation pond.
10. The discharger shall comply with "Monitoring and Reporting Program No. 00-057", and future revisions thereto, as specified by the Regional Board's Executive Officer; and shall be in accordance with the following:
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. The monitoring and reporting of sludge shall be done, at a minimum, on an annual basis, and more frequently, depending on the nature and effect of the sewage sludge use or disposal practices or as specified in this Board Order.
 - c. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency under 40 CFR Part 136.
 - d. The discharger shall retain records of all monitoring information including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation. The discharger shall also retain copies of all reports required by this Board Order, and records of all data used to complete the application for this Board Order, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Board's Executive Officer.

11. Records of monitoring information shall include:
 - a. A map showing surveyed locations of groundwater monitoring wells, all groundwater elevations measured during a two-hour period of the same day and posted at appropriate well locations, groundwater elevation contours, map scale, north arrow, legend, groundwater flow direction and gradient;
 - b. A table containing date and time of measurement of depth to groundwater, top of the casing elevation, depth to groundwater, total depth and screen interval of the monitoring well; volume of groundwater purged, readings of pH, specific conductance, and turbidity recorded during purging until these parameters stabilized within 10 percent of the previous reading;
 - c. Chain of custody form(s) containing the following information: sample number and its location; date and time of sampling, sampler's name; sample type, matrix, container and preservative used, analytical methods to be used; date and time of receipt of samples by the representative of the certified laboratory;
 - d. Date analyses were performed, and the individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses. Analytical results of the pollutants exceeding the background concentrations will be highlighted, reasons for exceedance discussed, and the corrective actions taken to prevent exceedance in the following reporting periods shall be included in the reports submitted to this Board.
12. The discharger shall report all monitoring data to the Regional Board. Monitoring for any of the parameters more frequently than the frequency required in the Monitoring and Reporting Program No. 00-057 shall be included in the calculation and reporting of the data required by the Monitoring and Reporting Program.
13. The discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with the specifications prepared by the Regional Board's Executive Officer. Such specifications are subject to periodic revisions as may be warranted.
14. The discharger shall allow the Regional Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the premises regulated by this Board Order, or the place where records must be kept under the conditions of this Board Order;
 - b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this Board Order;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; and
 - d. Sample or monitor at reasonable times, for the purpose of assuring compliance with this Board Order or as otherwise authorized by the California Water Code, any substances or parameters at this location.
15. The discharger shall provide adequate notice to the Regional Board's Executive Officer of the following:

- a. Any new introduction of pollutants into any of the treatment facilities described in the Findings of this Board Order from an indirect discharger which would be subject to Section 301 or 306 of the Clean Water Act, if it were directly discharging the pollutants.
 - b. Any substantial change in the volume or character of pollutants being introduced into any of the treatment facilities described in the Findings of this Board Order by an existing or new source.
 - c. Any planned physical alterations or additions to the facilities described in this Board Order, or changes planned in the discharger's sludge use or disposal practice, where such alterations, additions, or changes may justify the application of Board Order conditions that are different from or absent in the existing Board Order, including notification of additional disposal sites not reported during the Board Order application process, or not reported pursuant to an approved land application plan.
 - d. Adequate notice shall include information on the quality and quantity of effluent introduced, and any anticipated impact of the change on the quantity or quality of the discharger's effluent and/or sludge.
 - e. The discharger shall report all instances of noncompliance. Reports of noncompliance shall be submitted with the discharger's next scheduled self-monitoring report or earlier if requested by the Regional Board's Executive Officer, if required by an applicable standard for sludge use and disposal, or as outlined in Provision No. 8.
16. The discharge shall not cause degradation of any beneficial use of surface or ground water.
 17. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the discharge facilities inoperable.
 18. Adequate measures shall be taken to assure that unauthorized persons are effectively excluded from contact with the wastewater disposal facilities.
 19. Facilities shall be available to keep the plant in operation in the event of commercial power failure.
 20. The discharger shall implement acceptable operation and maintenance at the wastewater treatment plant, so that needed repair and maintenance are performed in a timely manner.
 21. The discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with the specifications prepared by the Regional Board's Executive Officer. Such specifications are subject to periodic revisions as may be warranted.
 22. The discharger may be required to submit technical reports as directed by the Regional Board's Executive Officer.
 23. All storm water discharges from this facility must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies, regarding discharges of storm water to storm water drain systems or other courses under their jurisdiction.
 24. Ponds shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, ancillary inflow, and infiltration during the non-irrigation season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

25. The discharger shall obtain prior written approval from the Regional Board's Executive Officer specifying location and method of disposal, before disposing of treated or untreated sludge, or similar solid waste materials. In addition, the discharger shall provide the results of any sludge analyses as specified by the Regional Board's Executive Officer.
26. All sludge generated at the wastewater treatment plant will be disposed, treated, or applied to land in accordance with Federal Regulations 40 CFR 503.
27. The discharger shall maintain a permanent log of all solids hauled away from the treatment facility for use/disposal elsewhere and shall provide a summary of the volume, type (screenings, grit, raw sludge, digested sludge), use (agricultural, composting, etc.), and the destination in accordance with the Monitoring and Reporting Program of this Board Order. The sludge that is stockpiled at the treatment facility shall be sampled and analyzed for those constituents listed in the sludge monitoring section of the Monitoring and Reporting Program of this Board Order and as required by Title 40, Code of Federal Regulations, Part 503. The results of the analyses should be submitted to the Regional Board as part of the Monitoring and Reporting Program.
28. Collected, screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner that is consistent with State Water Resources Control Board and Integrated Waste Management Board's joint Regulations (Title 27) of the California Code of Regulations (CCR) and approved by the Regional Board's Executive Officer.
29. In the event the discharger allows significant industrial uses to discharge to the wastewater treatment plant, the discharger shall do so by developing and implementing an approved Industrial Pretreatment Program in accordance with the applicable Federal Pretreatment Regulations promulgated in 40 CFR Part 403.
30. This Board Order does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement or violation of federal, state, or local laws or regulations.

F. Pretreatment

1. In the event that significant industrial wastewater is being discharged to the wastewater treatment facility, then:
 - a. The discharger shall develop, implement, and maintain an industrial pretreatment program approved by the Regional Board's Executive Officer.
 - b. The discharger shall maintain an adequate revenue program and enforce the prohibitions against any violation of the applicable pretreatment standards approved by the Regional Board's Executive Officer.
2. The discharger shall provide the Regional Board with an annual report describing the pretreatment program activities over the previous twelve-month period. The report shall be transmitted to the Regional Board office no later than January 31 of each year and include:
 - a. A summary of actions taken by the discharger which ensures industrial-user compliance;
 - b. An updated list of industrial users (by SIC categories) which were issued permits, and/or enforcement orders, and a status of compliance for each user; and
 - c. The name and address of each user that received a revised discharge limit.

3. The Regional Board retains the right to take legal action against an industrial user and/or the discharger where a user fails to meet the approved applicable pretreatment standards.

I, Philip A. Gruenberg, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on September 13, 2000.

Original signed by/
Executive Officer